

**What is claimed is**

1. A method for increasing the number of optical channels in an optical crossbar switch with a plurality of selectable reflective optical switching elements, said method comprising
  - a. focusing a selected input light beam on a first selected reflective optical switching element and
  - b. selecting a second reflective optical switching element
  - c. focusing a said selected input light beam on said second selected reflective optical switching element.
2. A method as in claim 1, wherein said focusing comprises varying the focal length of an adaptive optical element.
3. A method as in claim 2, wherein said adaptive optical element comprises a variable mirror device.
4. A method as in claim 2, wherein said adaptive optical element comprises a variable lens.
5. A method for increasing the switching speed of an optical crossbar switch with a plurality of selectable reflective optical elements, said method comprising
  - a. focusing a selected input light beam on a first selected reflective optical switching element and

- b. selecting a second reflective optical switching element
  - c. focusing a said selected input light beam on said second selected reflective optical switching element.
- 6. A method as in claim 5, wherein said focusing comprises varying the focal length of an adaptive optical element.
- 7. A method as in claim 6, wherein said adaptive optical element comprises a variable mirror device.
- 8. A method as in claim 6, wherein said adaptive optical element comprises a variable lens.
- 9. A method for redirecting a light beam in an optical crossbar switch with a plurality of selectable reflective optical elements, said method comprising
  - a. focusing a selected input light beam on a first selected reflective optical switching element and
  - b. selecting a second reflective optical switching element
  - c. focusing a said selected input light beam on said second selected reflective optical switching element.
- 10. A method as in claim 9, wherein said focusing comprises varying the focal length of an adaptive optical element.

11. A method as in claim 10, wherein said adaptive optical element comprises a variable mirror device.
12. A method as in claim 10, wherein said adaptive optical element comprises a variable lens.
13. A method for reducing the size of a reflective optical switching element in an optical crossbar switch with a plurality of selectable reflective optical elements, said method comprising
- a. focusing a selected input light beam on a first selected reflective optical switching element and
  - b. selecting a second reflective optical switching element
  - c. focusing a said selected input light beam on said second selected reflective optical switching element.
14. A method as in claim 13, wherein said focusing comprises varying the focal length of an adaptive optical element.
15. A method as in claim 14, wherein said adaptive optical element comprises a variable mirror device.
16. A method as in claim 14, wherein said adaptive optical element comprises a variable lens.

17. A method for varying the focal point of an input signal light beam in an optical crossbar switch with a plurality of selectable reflective optical elements by varying the focal length of an adaptive optical element.
18. A method as in claim 17, wherein said adaptive optical element comprises a variable mirror device.
19. A method as in claim 17, wherein said adaptive optical element comprises a variable lens.
20. A method as in any one of claim 4, claim 8, claim 12, or claim 19, wherein said variable lens is a variable micro-machined membrane lens.
21. An optical crossbar switch for switching input light beams, comprising
- a. at least one adaptive optical element with variable focal length and
  - b. a plurality of selectable reflective optical elements, said selectable reflective optical elements being alternately selectable and interposable in the path of a selected input light beam and more than one of said selectable reflective optical elements being located within the range over which said adaptive optical element is capable of focusing said selected input light beam.
22. An optical crossbar switch as in claim 21, wherein said adaptive optical element comprises a variable mirror device.

23. An optical crossbar switch as in claim 21, wherein said adaptive optical element comprises a variable lens.
24. An optical crossbar switch as in claim 23, wherein said variable lens is a variable micro-machined membrane lens.